

Work Order ID 134707

134707

Page 1

Thursday, July 16, 2015 10:47:42 AM

Item ID: D5155-11 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Co-Pilot Collective Head (212)
 Start Date: 7/16/2015 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 7/16/2015 Req'd Qty: 4.00 ***4*** Customer:
 Reference:

Approvals: Process Plan: MLS Date: JUL 16 2015 Tooling: _____ Date: _____
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____
 Run Start ***NR1***
 Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D5155	B

100	Cut blanks as per folio	0.00				4	✓		
100									
Bandsaw	Memo	0.00							
Jeaspa Bandsaw	CUT BLANK AT 4.900"								

110		0.00				4	✓		DAS 14 9-89
110									
HAAS 5AXIS	Memo	0.00							
HAAS CNC vertical machine #5	MACHINE AS PER DWG & FOLIO FB349/ D5155-11								
	FOLIO REV: <u>AA</u>								
	DWG REV: <u>B</u>								

DO NOT BUFF OR POLISH PART

DEBURR

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

Work Order ID 134707***134707***

Page 2

Item ID: D5155-11

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Co-Pilot Collective Head (212)

Start Date: 7/16/2015 Start Qty: 4.00 ***4***

Cust Item ID:

Required Date: 7/16/2015 Req'd Qty: 4.00 ***4***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.00				4	10		DAS 14 9-89 15/08/05
130 *130* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.00				4	0		DAS 40 9-89 15/08/10
140 *140* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				(41)			DAS 38 9-89 AUG 11 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Misidentified ☐	Past Due ☐																																																																

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Outsource process-Anodize per QSI017 4.1.10.1	0.00							
150									
Outsource4	Memo	0.00							
Outsource process - Anodize	ISSUE P/O TO ATG: <u>29446</u> ANODIZE BLACK AS PER MIL SPEC AND DWG C OF CO IS REQUIRED								
155	Receive & Inspect for Damage & Mat'l Certs	0.00							
155									
Packaging	Memo	0.00							
Packaging									
158	QC5- Inspect part completeness to step on W/O	0.00							
158									
QC	Memo	0.00							
Quality Control									

4x 8015-08-20

(4)

DAS
38
9-89
AUG 20 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	Identify as per dwg & Stock Location: <u>ST #4150</u>	0.00							
160									
Packaging	Memo	0.00							
Packaging									
170	QC21- Final Inspection - Work Order Release	0.00							
170									
QC	Memo	0.00							
Quality Control									

DAS
6
9-89

④ JA

AUG 20 2015

MUS

AUG 21 2015

20150821 *gh*

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																
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Picklist Print

Thursday, July 16, 2015 10:47:46 AM

Page 1

Work Order ID: 134707

134707

Parent Item: D5155-11

D5155-11

Parent Item Name: Co-Pilot Collective Head (212)

Start Date: 7/16/2015

Required Date: 7/16/2015

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV.A NEW ISSUE JFS 15/01/14 VERIFIED BY: JLM IPP REV:B
15.07.02 AS PER DWG REV.B DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B2.500X03.50 0		Purchased	No			100	f	4.5000	0.409	1.722105			

M6061T6B2 500X03 500

6061-T6 Bar 2.50 x 3.50

**

B-A 15/07/28

Location

MAT004

→ m132320

Loc Qty

4.5

4.5

Loc Code

J.650 ++

DQA: _____ Date: _____



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DART AEROSPACE LTD		Work Order:	134707
Description: Co-Pilot Collective Head (212)		Part Number:	D5155-11
Inspection Dwg: D5155 Rev: A		Page 1 of 1	

INSPECTION SHEET

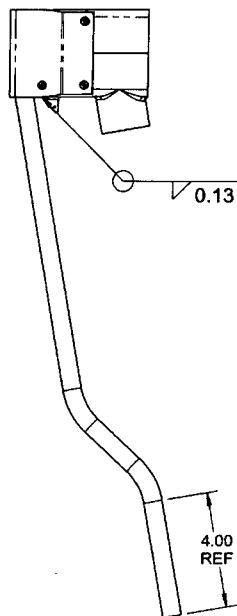
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
2.800	+0.010/-0.000	2.801	✓		H-G 3/006	
21°	+/-0.5°	21°	✓		C-Square	
R0.19	+/-0.030	R.190	✓		R-G	
R0.25	+/-0.030	R.250	✓		"	
0.35	+/-0.030	.347	✓		Vern M-06	
0.06	+/-0.030	.062	✓		"	
0.33	+/-0.030	.332	✓		"	
0.227	+/-0.010	.226	✓		"	
1.850	+/-0.010	1.845	✓		H-G 3/006	
Ø0.125	+0.004/-0.001	Ø.126	✓		Vern M-06	
2.547	+/-0.010	2.547	✓		"	
0.35	+/-0.030	.256	✓		"	
1.50	+/-0.030	1.505	✓		"	
Ø0.150	+0.005/-0.001	Ø.150	✓		"	
1.450	+/-0.010	1.450	✓		"	
R0.30	+/-0.030	R.300	✓		R-G	
R0.25	+/-0.030	R.250	✓		"	
R0.03	+/-0.030	R.030	✓		"	
0.100	+/-0.010	.100	✓		Vern M-06	
0.30	+/-0.030	.300	✓		"	
2.400	+/-0.010	2.400	✓		"	
R0.25	+/-0.030	R.250	✓		R-G	
3.000	+/-0.010	3.000	✓		Vern M-06	
R0.30	+/-0.030	R.300	✓		R-G	
R0.25	+/-0.030	R.250	✓		"	
1.450	+/-0.010	1.445	✓		Vern M-06	
1.750	+/-0.010	1.745	✓		"	
0.20	+/-0.030	.203	✓		"	
4.700	+/-0.010	4.697	✓		"	
1.350	+/-0.010	1.345	✓		"	
2.70	+/-0.030	2.697	✓		"	
2.50	+/-0.030	2.497	✓		"	

Measured by:	14	Checked by:	40	QC Inspector:	
Date:	15/08/05	Date:	15/08/10	Date:	

Engineering Approval: (If necessary)		Date:	
--	--	--------------	--

Rev	Date	Change	Revised by	Approved
A	15.06.22	New Issue	KJ	

ITEM	QTY	P/N	DESCRIPTION
1	X	D5155-041	CO-PILOT COLLECTIVE HEAD ASSEMBLY (205)
2	1	D4410-7	CONDUIT
3	1	D5155-1	CO-PILOT COLLECTIVE HEAD (205)
4	1	D5155-9	CO-PILOT COLLECTIVE HEAD (205)
5	1	D5156-9	BACK PLATE
6	11	90296A108	HELI-COIL INSERT (6-32 X 0.276)
7	2	MS16562-223	SLOTTED SPRING PIN
8	7	MS24693-24B	SCREW, CSK 100"

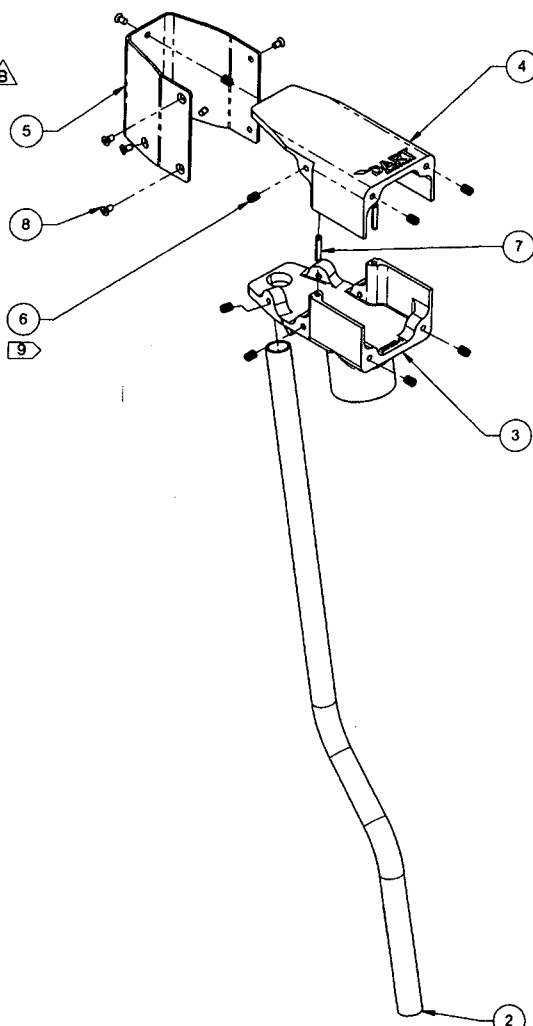


D5155-041 WELDING DETAIL

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2 AFTER WELDING
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 1.08 lbs
- 8) WELD PER DART QSI 004
- 9) INSTALL AFTER ANODIZING

D5155-041 CO-PILOT COLLECTIVE HEAD ASSEMBLY (205)



NO 134707 MJS
15-07-16

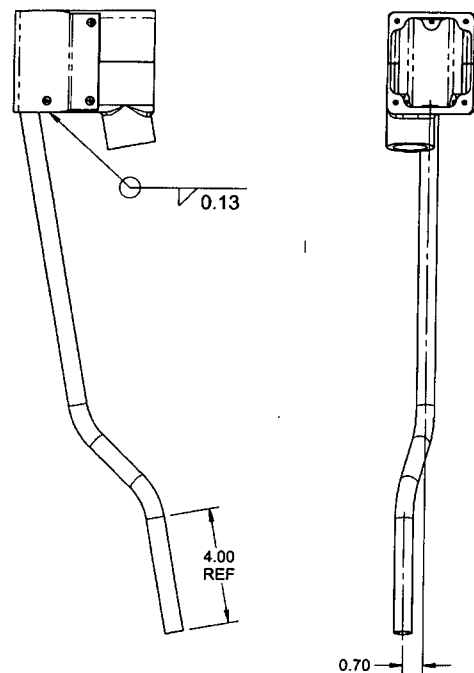
RELEASED

A.P. 2015 JUL 02 ECU 15-577

B	REVISE DIM: ZN D3-7, REVISE NOTE 2, ZN A8-13, A8-14, REVISE LENGTH OF PIN: ZN D6-1, D6-2, D5-3, D6-4, REVISE DEPTH: ZN C7-5, C7-7, C7-9, C7-11, C5-13, C4-14, REVISE DIM: ZN C7-5, C7-7, C7-9, C6-11, B7-13, B7-14, B2-5, B2-7, B2-9, B2-11, C5-13, C4-14, D8-6, D8-8, D8-10, D5-6, D5-8, D5-10, D5-12, B8-7, D7-12, C7-5, C7-7, C7-9, C6-11, D2-13, D2-14	VS	15.05.21
A	NEW ISSUE	VS	14.09.10
REV.	DESCRIPTION	BY	DATE
DESIGN	VS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VS		
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	JFS	D5155	SHEET 1 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
DATE	15.05.21	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

APPROVED

ITEM	QTY	P/N	DESCRIPTION
1	X	D5155-043	CO-PILOT COLLECTIVE HEAD ASSEMBLY (212)
2	1	D4410-7	CONDUIT
3	1	D5155-3	CO-PILOT COLLECTIVE HEAD (212)
4	1	D5155-11	CO-PILOT COLLECTIVE HEAD (212)
5	1	D5156-11	BACK PLATE
6	11	90296A108	HELI-COIL INSERT (6-32 X 0.276)
7	2	MS16562-223	SLOTTED SPRING PIN
8	7	MS24693-24B	SCREW, CSK 100°

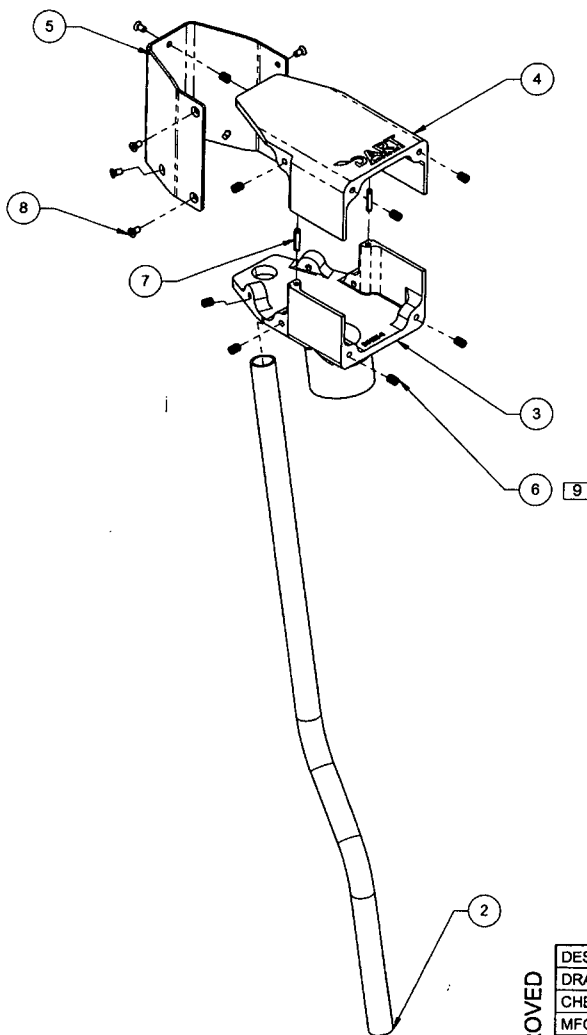


D5155-043 WELDING DETAIL

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2 AFTER WELDING
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 1.20 lbs
- 8) WELD PER DART QSI 004
- 9) INSTALL AFTER ANODIZING

D5155-043 CO-PILOT COLLECTIVE HEAD ASSY (212)

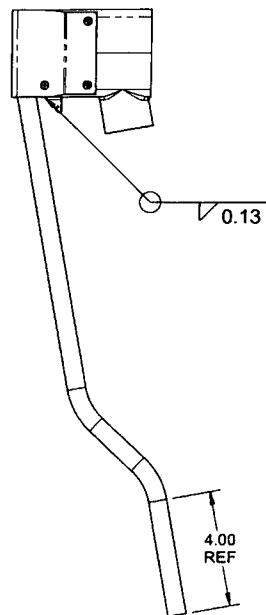


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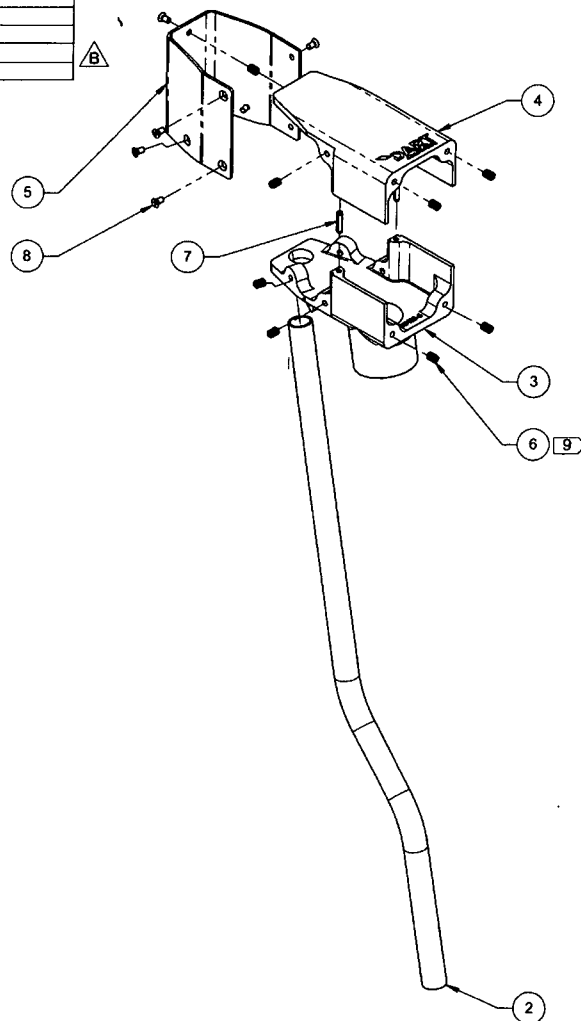
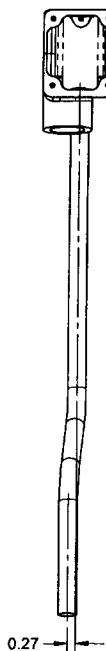
A. 2015 JUL 02

DESIGN	VS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VS		
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5155	SHEET 2 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
DATE	15.05.21	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

ITEM	QTY	P/N	DESCRIPTION
1	X	D5155-045	CO-PILOT COLLECTIVE HEAD ASSEMBLY (EAGLE SINGLE)
2	1	D4410-7	CONDUIT
3	1	D5155-5	CO-PILOT COLLECTIVE HEAD (EAGLE SINGLE)
4	1	D5155-9	CO-PILOT COLLECTIVE HEAD (205)
5	1	D5156-9	BACK PLATE
6	11	90296A108	HELI-COIL INSERT (6-32 X 0.276)
7	2	MS16562-223	SLOTTED SPRING PIN
8	7	MS24693-24B	SCREW, CSK 100*



D5155-045 WELDING DETAIL



- NOTES:**
- 1) MATERIAL: N/A
 - 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2 AFTER WELDING
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
 - 7) WEIGHT: 1.06 lbs
 - 8) WELD PER DART QSI 004
 - 9) INSTALL AFTER ANODIZING

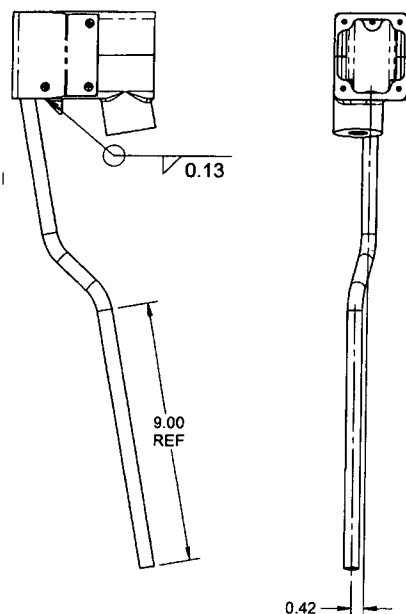
D5155-045 CO-PILOT COLLECTIVE HEAD ASSY (EAGLE SINGLE)

APPROVED

DESIGN	VS	DART AEROSPACE LTD	
DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5155	SHEET 3 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
DATE	15.05.21	COPYRIGHT © 2013 BY DART AEROSPACE LTD	
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A.E 2015 JUL 02

ITEM	QTY	P/N	DESCRIPTION
1	X	D5155-047	CO-PILOT COLLECTIVE HEAD ASSEMBLY
2	1	D5054-1	CONDUIT
3	2	D5073-1	SNAP RING
4	1	D5155-7	CO-PILOT COLLECTIVE HEAD (205)
5	1	D5155-9	CO-PILOT COLLECTIVE HEAD (205)
6	1	D5156-9	BACK PLATE
7	11	90296A108	HELI-COIL INSERT (6-32 X 0.276)
8	2	MS16562-223	SLOTTED SPRING PIN
9	7	MS24693-24B	SCREW, CSK 100°
10	1	MS27641-3	BEARING

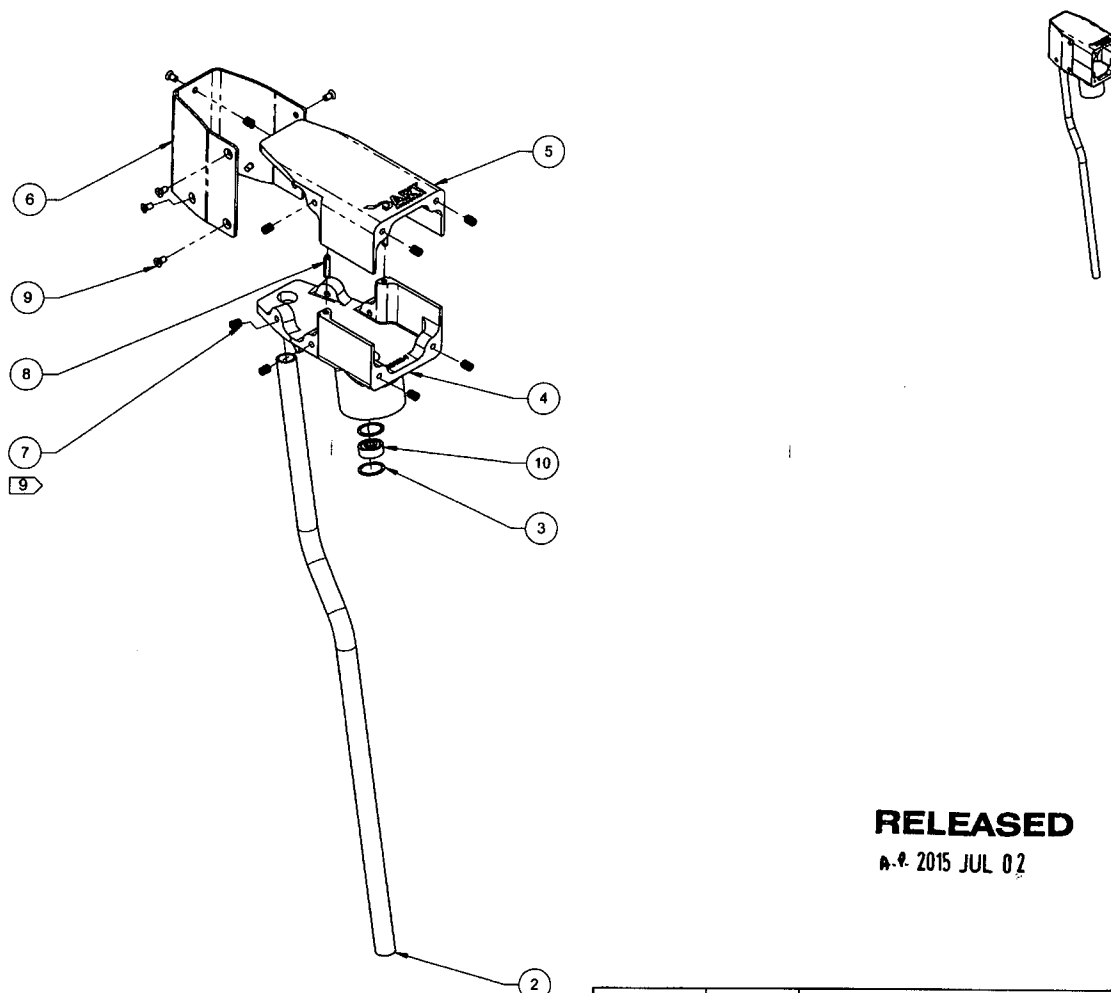


D5155-047 WELDING DETAIL

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2 AFTER WELDING
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 1.14 lbs
- 8) WELD PER DART QSI 004
- 9) INSTALL AFTER ANODIZING

**D5155-047 CO-PILOT COLLECTIVE HEAD ASSY
FOR 205 WITH 204-001-290-5 STICK AND THROTTLE ASSEMBLY INSTALLED**

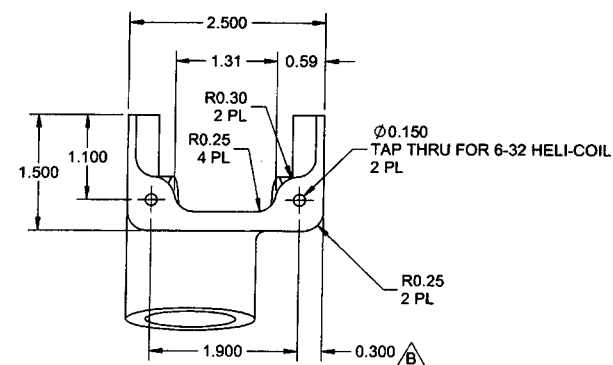
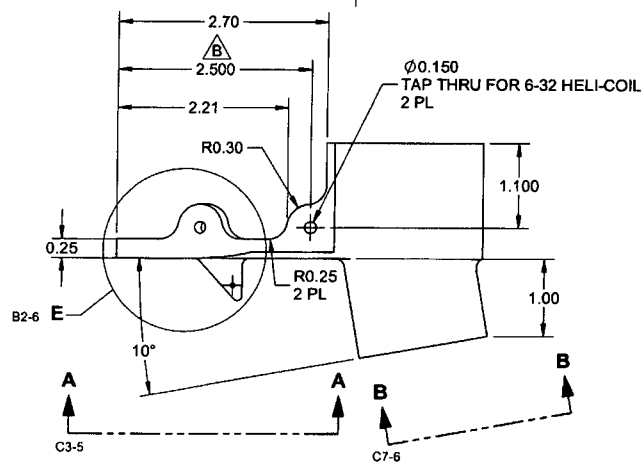
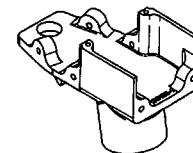
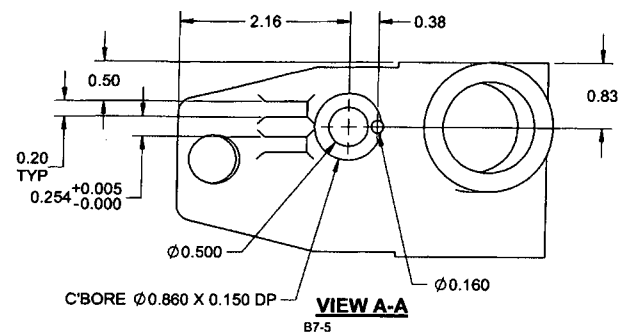


RELEASED

A-9 2015 JUL 02

APPROVED

DESIGN	VS	DART AEROSPACE LTD	
DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5155	SHEET 4 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
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A.P. 2015 JUL 02

2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: IDENTIFY PER QSI 044 6.3 IN THIS AREA TO MAX DEPTH
OF 0.010 WITH A MIN. TOOL RAD OF R0.010
7) WEIGHT: 0.47 lbs
8) UNDIMENSIONED FEATURES ARE DEFINED BY D5155-1.SLDPRT

D5155-1 CO-PILOT COLLECTIVE HEAD (205)

APPROVED	DESIGN	VS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D5155 TITLE CO-PILOT COLLECTIVE HEAD COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRINTED FROM A CAD FILE. IT IS NOT A TRUE COPY OF THE ORIGINAL. IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.	REV. B
	DRAWN	VS		SHEET 5 OF 14
	CHECKED	RF		SCALE
	MFG. APPR.	JFS		NTS
	APPROVED	HS		
	DE APPR.	DS		
DATE		15.05.21		

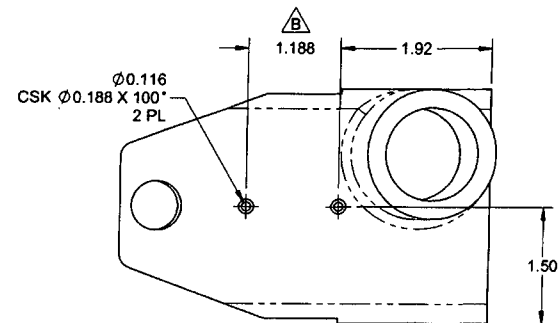
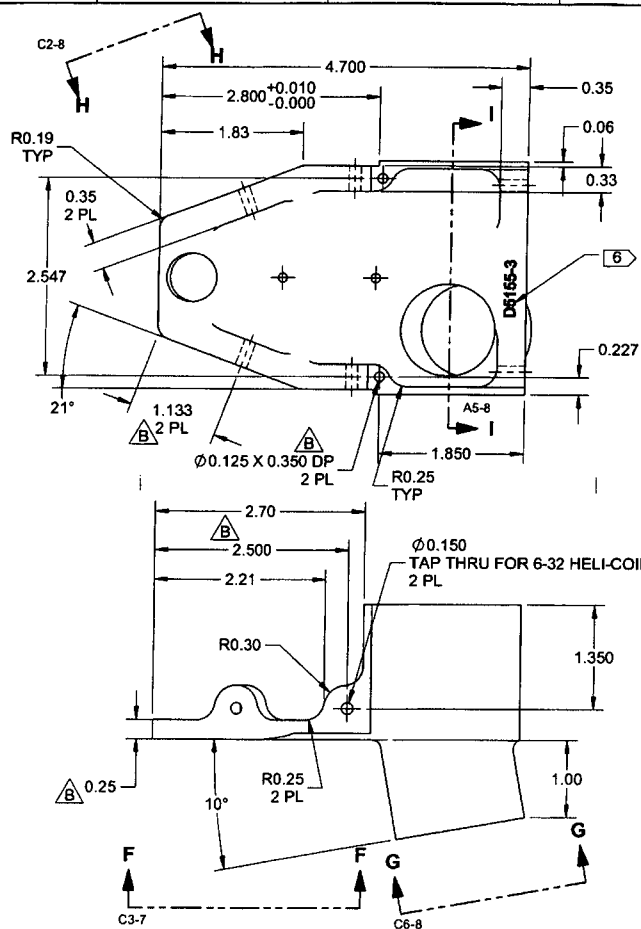


RELEASED
A. 2015 JUL 02

- NOTES:**
 1) MATERIAL: N/A
 2) FINISH: N/A
 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 6) IDENTIFICATION: N/A
 7) WEIGHT: N/A

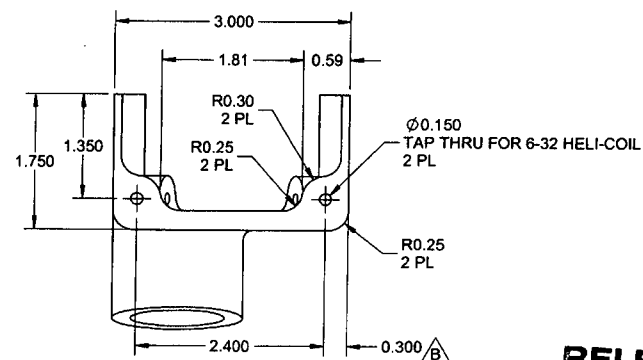
D5155-1 CO-PILOT COLLECTIVE HEAD (205)
DETAIL VIEWS

APPROVED	DESIGN	VS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D5155 TITLE CO-PILOT COLLECTIVE HEAD COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRINTED AND CONSIDERED VALID BY THE DART SYSTEMS CHECKER ONLY THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMPILED OR SUBMITTED TO ANY OTHER PERSON WITHOUT THE WRITTEN CONSENT OF DART AEROSPACE LTD	REV. B SHEET 6 OF 14 SCALE NTS
	DRAWN	VS		
	CHECKED	RF		
	MFG. APPR.	JFS		
	APPROVED	HS		
	DE APPR.	DS		
	DATE	15.05.21		



VIEW F-F

B7-7



RELEASED

A.P. 2015 JUL 02

NOTES:

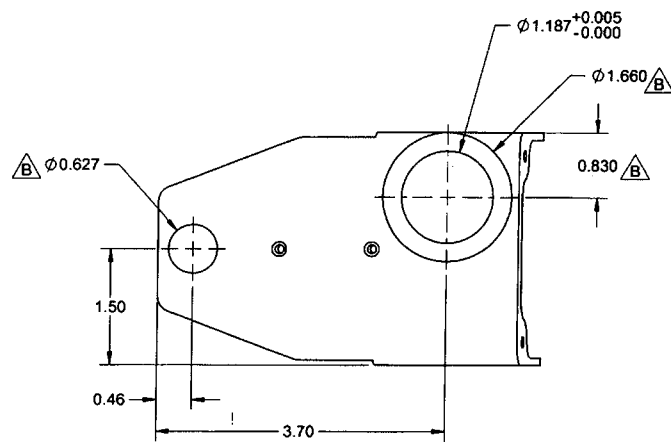
- 1) MATERIAL: 6061-T6/T651/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.3 IN THIS AREA TO MAX DEPTH
OF 0.010 WITH A MIN. TOOL RAD OF R0.010
- 7) WEIGHT: 0.51 lbs
- 8) UNDIMENSIONED FEATURES DEFINED BY D5155-3.SLDPRT

D5155-3 CO-PILOT COLLECTIVE HEAD (212)

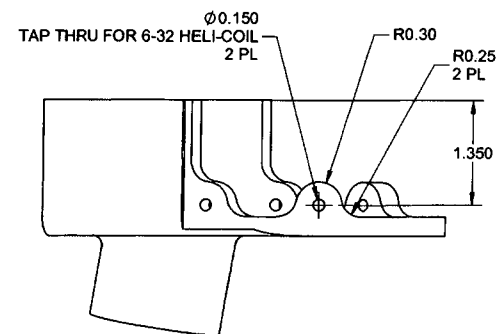
APPROVED

DESIGN	VS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VS		
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5155	SHEET 7 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
DATE	15.05.21	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

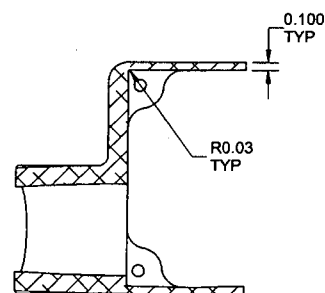
8 7 6 5 4 3 2 1



VIEW G-G
B6-7



VIEW H-H
D7-7



SECTION I-I
D6-7

RELEASED
A.9.2015 JUL 02

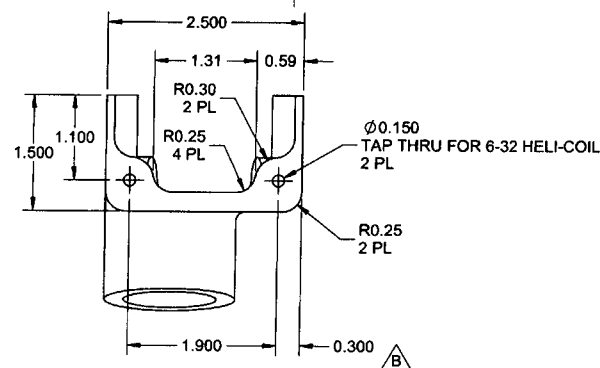
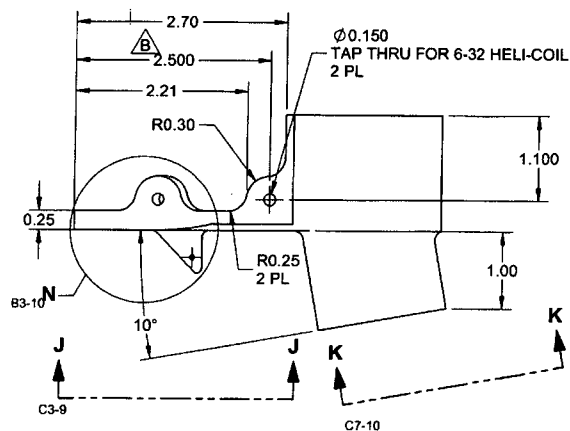
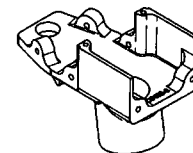
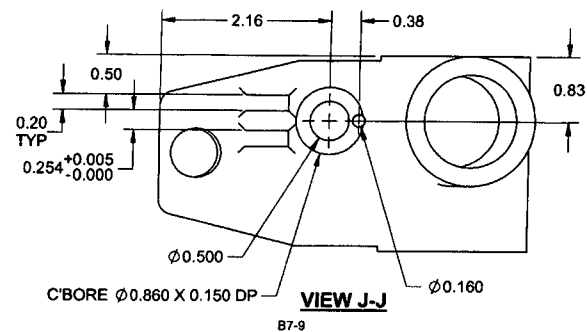
- NOTES:**
- 1) MATERIAL: N/A
 - 2) FINISH: N/A
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: N/A

D5155-3 CO-PILOT COLLECTIVE HEAD (212)
DETAIL VIEWS

APPROVED

DESIGN	VS	DART AEROSPACE LTD	
DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5155	SHEET 8 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
DATE	15.05.21	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

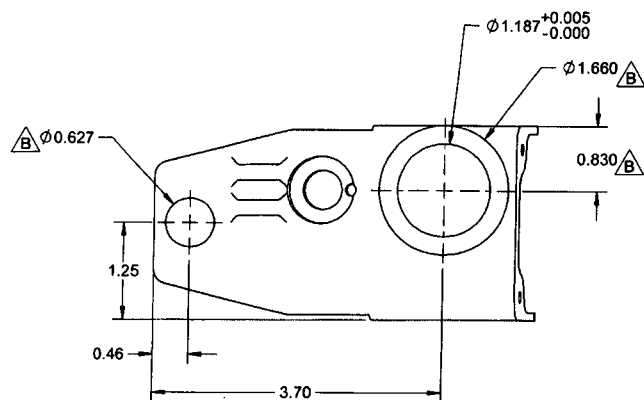
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A.Q. 2015 JUL 02

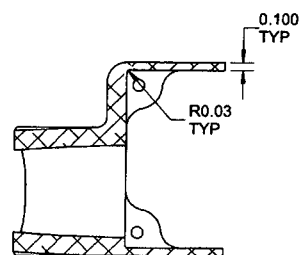
D5155-5 CO-PILOT COLLECTIVE HEAD (EAGLE SINGLE)

DESIGN	VS	DART AEROSPACE LTD	
DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5155	SHEET 9 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
DATE	15.05.21	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS NOT TO BE USED FOR ANY PURPOSE OR REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.	



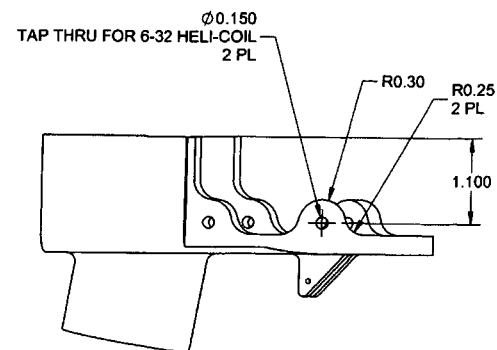
VIEW K-K

B6-9



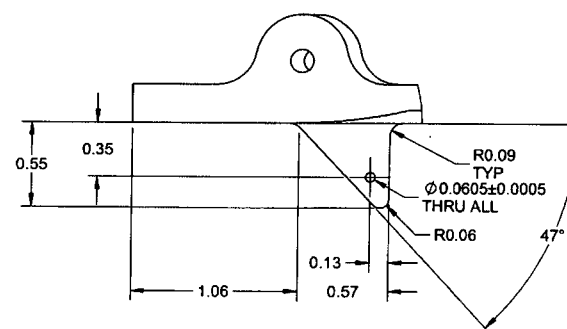
SECTION M-M

D6-9



VIEW L-L

D7-9



DETAIL N

B7-9

RELEASED

4.9. 2015 JUL 02

NOTES:

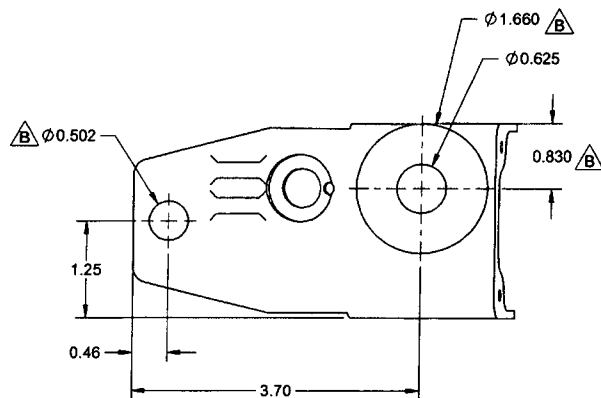
- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A

D5155-5 CO-PILOT COLLECTIVE HEAD (EAGLE SINGLE)

DETAIL VIEWS

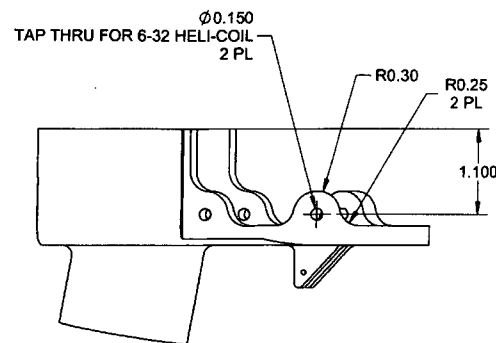
APPROVED

DESIGN	VS	DART AEROSPACE LTD	
DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5155	SHEET 10 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
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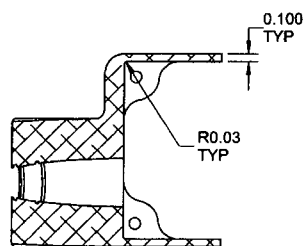
VIEW P-P

B5-11



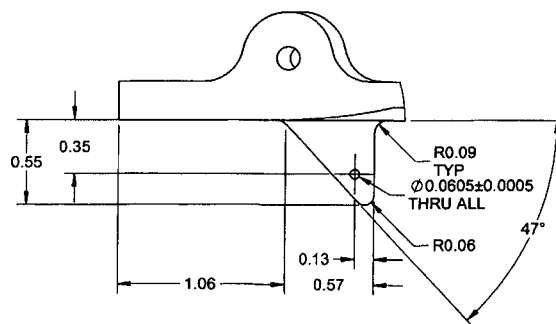
VIEW Q-Q

D7-11



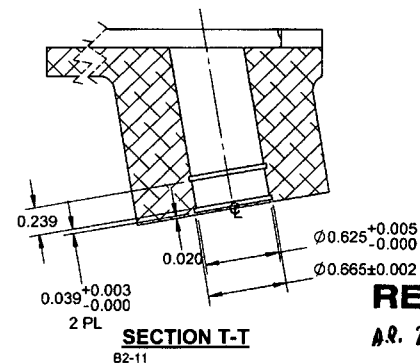
SECTION R-R

C6-11



DETAIL S

B6-11



SECTION T-T

B2-11

RELEASED

A.R. 2015 JUL 02

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A

D5155-7 CO-PILOT COLLECTIVE HEAD (205)

DETAIL VIEWS

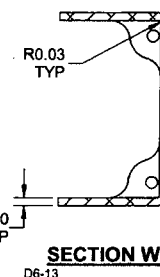
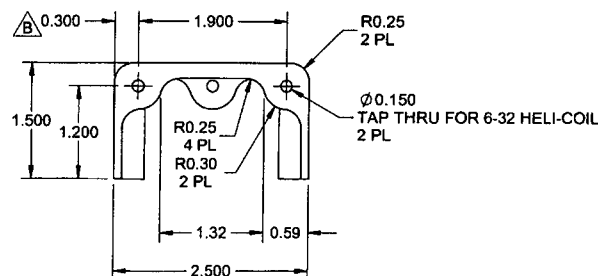
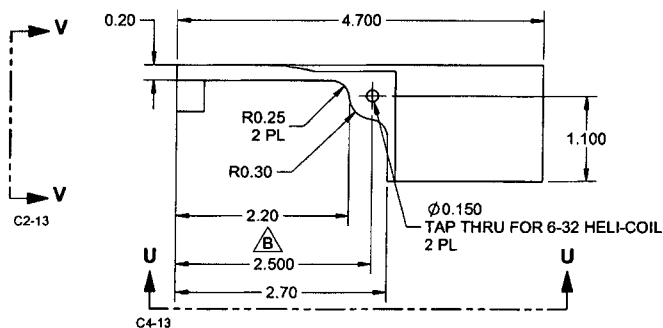
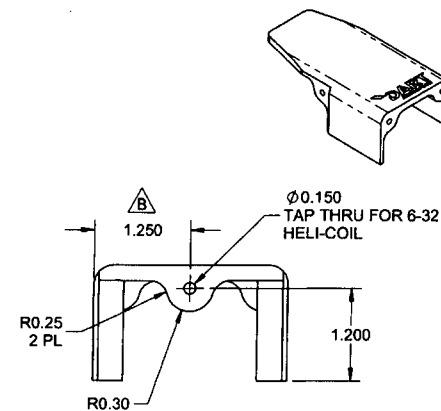
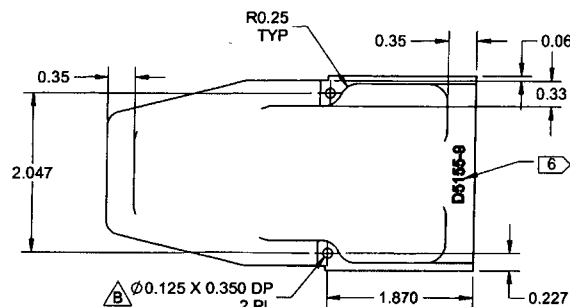
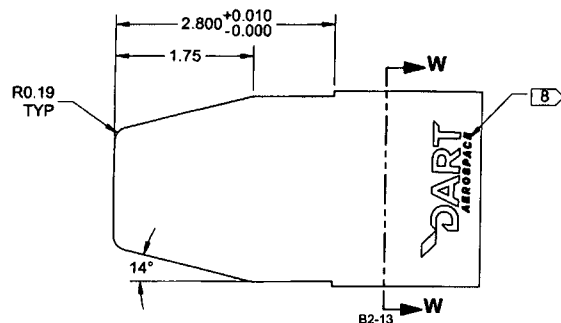
APPROVED

DESIGN	VS
DRAWN	VS
CHECKED	RF
MFG. APPR.	JFS
APPROVED	HS
DE APPR.	DS
DATE	15.05.21

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **D5155** REV. B
SHEET 12 OF 14
TITLE **CO-PILOT COLLECTIVE HEAD** SCALE NTS

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A.R. 2015 JUL 02

SECTION W-W
D6-13

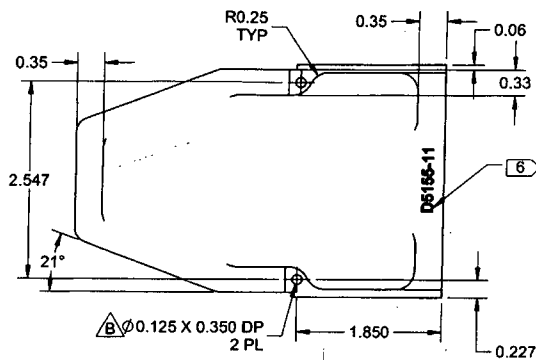
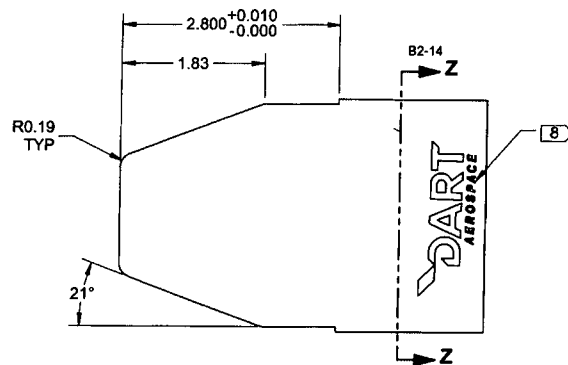
NOTES:

- 1) MATERIAL: 6061-T6/T651/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II
OR IIB CLASS 2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.3 IN THIS AREA TO MAX DEPTH
OF 0.010 WITH A MIN. TOOL RAD OF R0.010
- 7) WEIGHT: 0.31 lbs
- 8) ENGRAVE "DART" LOGO AS SHOWN 0.003-0.005 DP
- 9) UNDIMENSIONED FEATURES DEFINED BY D5155-9.SLDPRT

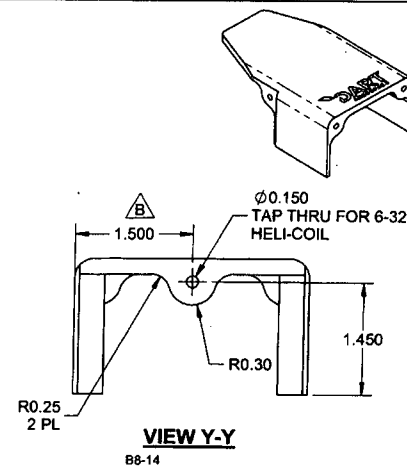
D5155-9 CO-PILOT COLLECTIVE HEAD (205)

APPROVED

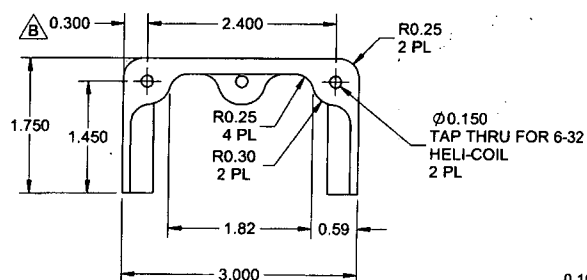
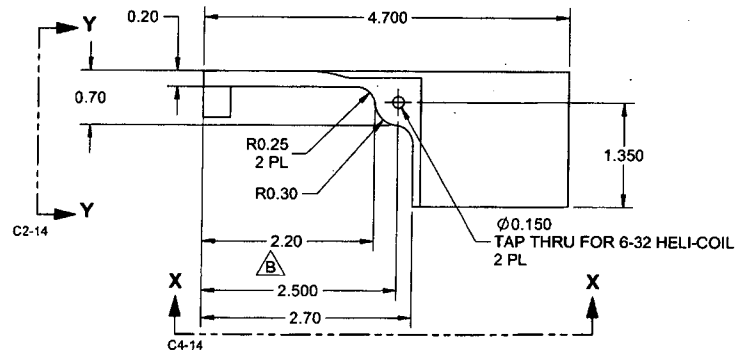
DESIGN	VS	DART AEROSPACE LTD	
DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	JFS	D5155	SHEET 13 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	
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VIEW X-X
B6-14



VIEW Y-Y
B8-14



SECTION Z-Z
D6-14

RELEASED
A.R. 2015 JUL 02

- NOTES:
- 1) MATERIAL: 6061-T6/T651/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
 - 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II
OR IIB CLASS 2
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.3 IN THIS AREA TO MAX DEPTH
OF 0.010 WITH A MIN. TOOL RAD OF R0.010
 - 7) WEIGHT: 0.36 lbs
 - 8) ENGRAVE "DART" LOGO AS SHOWN 0.003-0.005 DP
 - 8) UNDIMENSIONED FEATURES DEFINED BY D5155-11.SLDPRT

D5155-11 CO-PILOT COLLECTIVE HEAD (212)

APPROVED	DESIGN	VS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
	DRAWN	VS		
	CHECKED	RF	DRAWING NO.	REV. B
	MFG. APPR.	JFS	D5155	SHEET 14 OF 14
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
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A.T.G. Industries Inc.
731, rue Industrielle Rd.
PLATING DEPARTMENT
Rockland, On K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 63874

Date: 19-Aug-15

To

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
Canada

Ship To

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
Canada

Ph: 613-632-5200

Fax: 613-632-1185

Ph: 613-632-5200

Fax: 613-632-1185

Terms		Ship Via	
Quantity	Description		
4 ea	Part: 647.7811 LOWER DEFLECTOR MIL-A-8625 TY III CL 2 PRIMER AS PER MIL-PRF-23377J TY I CL N Job: 20150624 PO: PO29446	Rev: N/C	Line:
8 ea	Part: 647.7810 BRACKET MIL-A-8625 TY III CL 2 PRIMER AS PER MIL-PRF-23377J TY I CL N Job: 20150625 PO: PO29446	Rev: N/C	Line:
8 ea	Part: 647.7811 BRACKET MIL-A-8625 TY III CL 2 PRIMER AS PER MIL-PRF-23377J TY I CL N Job: 20150626 PO: PO29446	Rev: N/C	Line:
4x 1 lot	Part: D5155-11 ✓ CO-PILOT BLACK ANODIZE MIL-A-8625 TYPE II CLASS 2 Job: 20150627 PO: PO29446	Rev: B	Line: SP 15-08-20
Certificate of Conformance			
A.T.G. Industries certifies that all items in this shipment are in conformance with all requirements, specifications and drawings referenced in the purchase order.			
ISO 9001 : 2008 REGISTERED ATG SALES-2010 TERMS APPLY			



A.T.G. Industries Inc.
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PLATING DEPARTMENT
Rockland, On K4K 1T2
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Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 63874

Date: 19-Aug-15

To

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
Canada

Ship To

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
Canada

Ph: 613-632-5200

Fax: 613-632-1185

Ph: 613-632-5200

Fax: 613-632-1185

Quantity	Description
	DATE: <u>8/18/15</u>
	CERTIFIED SIGNATURE: <u>[Signature]</u>
	RECEIVER SIGNATURE: <u>[Signature]</u>
	<u>SP15-08-20</u>



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO29446**

Purchase Order Date 8/12/2015

PO Print Date 8/14/2015

Page Number 2 of 3

Order From :

VC-ATG001

Ship To : DART AEROSPACE LTD

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

613-446-4544

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Ship To Contact

Ship To Phone

Terms

Net 30

Ship Via:

VENDOR'S TRUCK

Currency

CAD

Ship Acct:

FOB

FCA - (Free Carrier)

Line Total: \$144.00

134707

D5155-11 CO-PILOT
REV B

8/18/2015

4.00

\$31.25

\$125.00

Yes

8/18/2015

FINISH: BLACK ANODIZE PER MIL-A-8625F TYPE I OR 1B/C/II/III CLASS 2

Line Total: \$125.00

5 71401-45

PROCUREMENT
QUALITY CLAUSES

8/18/2015

1.00

\$0.00

\$0.00

No

8/18/2015

Procurement Quality Clauses

A004 FAA-PMA /TSO

A005 RIGHT OF ENTRY

A016 PERSONNEL QUALIFICATION

A024 PROCESS CERTIFICATIONS

A025 CERTIFICATE OF CONFORMANCE

A041 QUALITY MANAGEMENT SYSTEM

A042 DART NOTIFICATION BY SUPPLIER

A043 RETENTION OF QUALITY DOCUMENTS

Note:

8/14/2015